UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,330	01/16/2002	Francis Joseph Waller	05965C USA	7563

3

23543 7590 05/28/2003

AIR PRODUCTS AND CHEMICALS, INC.
PATENT DEPARTMENT
7201 HAMILTON BOULEVARD
ALLENTOWN, PA 181951501

EXAMINER	
MEDLEY, MARGARET B	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/050,330	WALLER ET AL.
	Examiner	Art Unit
	Margaret B. Medley	1714

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

This application was filed on January 16, 2002 as a continuation application of US Application 09/593,871 filed on June 14, 2000, now abandoned. An action on the merits follows:

The pending claims of record are claims 1-9.

There are three sheets of formal drawings of record.

The examiner is requesting applicants to submit to the USPTO a copy of the reference by G.J. Suppes et al in Ind. Eng. Chem. Res. (1998, 37, page 2029-2038) that is disclosed at the bottom section of page 8 of the instant application.

Claim 4 is objected to because of the following informalities: The spelling of the term "diisopropylether" should be corrected in line 2 of claim 4.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 is confusing in that it contradict the specification at the fourth full paragraph of page 8 of the specification that "the mixture of the incremental amounts of the first oxygenate and the stock diesel fuel" is used to adjust the final flush point". Clarification is requested.

Claim 9 is confusing in that it contradict the specification at the bridging paragraph of pages 9-10 that by "measuring the cetane number of mixtures of the stock diesel fuel and incremental amounts of the second oxygenate". Clarification is requested.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure, which is not enabling. "Incremental amounts of the first oxygenate" and "incremental amounts of the second oxygenate" is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The disclosure at the fourth full paragraph of page 8 and the bridging paragraph of pages 9-10 of the instant specification demonstrate that said particular features were considered essential by the applicant, are not reflected in the claims which are rejected.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art combined with Hawley's Condensed Chemical Dictionary and The Merck Index.

Applicants make admission on record at page 3 of the instant application that the Admitted Prior Art US Patent 5,858,030 of Waller et al discloses diesel fuel compositions for increasing cetane number by adding oxygenates of dimethoxypropane and dimethoxymethane to diesel fuel. Patentee further teaches that "monoglyme", ethylene glycol dimethyl ether (DMET), having a cetane number of 98 is a diesel fuel additive for the purpose of soot and smoke suppression, column 1, lines 61 to column 2, lines 1-5. Waller further teaches that alkylene glycol dialkyl ethers (DAAKS) e.g. methylene glycol dimethyl ether (DMMT) is a cetane-improving additive for diesel fuel, column 1, lines 44-50. The said patentee further teaches that surprising and unexpectedly, the combination of DMPP, propylene glycol dimethyl ether, and DMET is a synergistic cetane improver when blended with a conventional diesel fuel column 3, lines 45-54 and Table 3. Not only does Waller teaches that their DAAK compounds improve the cetane number of the diesel fuel composition, but that the said compounds have increased volatility that improves the cold starting properties of the diesel fuel composition, column 4, and lines 25-29.

The Hawley reference is relied on as a teaching reference. The said reference teaches the boiling point for various glyme compounds, e.g. monoglyme (BP 85^0C),

diglyme (BP 162^{0}C) etc., note column 2 at page 571 for glyme. Hawley clearly provides teachings that the monoglyme of Waller have a lower boiling point than the boiling point or distillation range of 150^0-380^{0}C of Waller and that diglyme has a higher boiling point of 162^{0}C that is higher than the lower range of 162^{0}C that is of higher than the lower range of 162^{0}C of the 150-380^{0}C range of Waller.

The Merck reference is relied on as a teaching reference. The said reference teaches the BP of 162^{0}C and the flash point of 70^{0}C for diglyme as well as other physical properties, note No. 3146 Diglyme, on page 459.

Waller clearly teaches the artisan in the art that a combination of a first oxygenate and a second oxygenate that is not the same, wherein the flash point of the first oxygenate is lower than the based fuel, wherein the second oxygenate is equal to or greater than the flash point of the based fuel are added to the based fuel to increase it cetane number and inherently the additives would adjust the flash point of the fuel composition because the flash point of the first oxygenates is lower than the flash point of the based fuel. The secondary references provide the motivation to the artisan in the art to select a glyme e.g. diglyme, as the secondary oxygenate to add to the first oxygenate e.g. monoglyme, of Waller to render claims 5 and 6 obvious.

With respect to claims 8 and 9, the calibration step appears to be a conventional logarithm chemical process measuring step used in chemical processes as admitted by applicant on page 8 of the instant specification rendering claims 8-9 obvious. Applicant makes admission on record at page 8 that the equation for measuring the adjustment of

final flash point of a based fuel with incremental amounts of the first oxygenate has been practiced by G. J. Suppes since 1998.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (Waller et al 5,858,030) combined with Hawley's Condensed Chemical Dictionary and the Merck Index as applied to claims 1-6 and 8-9 above, and further in view of Admitted Prior (Suppes et al).

Applicant further claim an equation $T_1/T_2 = 1 + T_1$ Rln [x] /Δ H that is not disclosed by Waller et al combined with the secondary references.

Applicants make admission on record at page 8 of the instant application that the equation $T_1/T_2 = 1 + T_1$ Rln [x] /Δ H has been used by G.J. Suppes. It is the examiner's position that it would have been obvious to the artisan in the art with the teachings of Suppes to use the conventional logorithan equation as a measurement of the oxygenates when adjusting the flash point of the mixture of diesel fuel base stock and the first oxygenate to render instant claim 7 obvious.

The prior art from the abandoned parent application US 09/593,871 and the prior art made of record in the instant application has been reviewed and reconsidered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret B. Medley whose telephone number is (703) 308-2518. The examiner can normally be reached on Monday--Friday from 7:30 a.m. to 6:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone

numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

MARGARET MEDLEY
PRIMARY EXAMINER

M.B. Medley/dh
May 27, 2003